

# Nominee: Corning Pretium EDGE® Advanced Optics (AO) by Corning Optical Communications

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## Nomination title: **Advanced Optics For Painless Upgrade To 40G And 100G**

Cabling solutions need to address the concerns of datacentre owners and operators, helping them increase revenue, reduce costs and minimise risk. Such solutions need to be designed to provide cost-effective flexible capacity to accommodate rapid and efficient scalability to meet the business needs and data growth, facilitating easy and cost-effective migration to higher speeds with minimal disruption and at the same time improve DCIM.

### **What are your product's/solution's key distinguishing features and/or USP?**

The Corning Pretium EDGE® Advanced Optics (AO) structured optical cabling solution addresses these datacentre challenges and needs by providing:

- I. High-density structured cabling solution with up to 3,456 fibres in a 4U housing.
- II. Plug and play conversion module for migration to high-speed parallel optics maintaining 100% fibre utilisation.
- III. Supports up to 108 ports (8 fibres) for higher speed parallel optics in a 1U housing
- IV. Integrated port tap for monitoring higher speed connections.
- V. High-density multi-fibre termination push-on (MTP), mass fusion splicing and single fibre terminations can be supported in the same housing.

### **What tangible impact has your product/solution had on the market and your customers?**

Growth in the provision of cloud and outsourcing services is fueling increased demand for capacity and faster speeds. Independent research suggests a 100% year-on-year growth for switches to enable 40Gbit/sec and 100Gbit/sec speeds to become the norm by 2017. The majority of spending in 2017 will come from systems offering 40Gbit/sec Ethernet for secondary network connections and 100Gbit/sec Ethernet for links within the datacentre and network backbone. Looking further down the line, the standard for 400Gbit/sec is being worked on currently.

This growth in switches and in the use of 40Gbit/sec or 100Gbit/sec interfaces means that the fibre density in the datacentre increases exponentially, and requires far greater floor

space. Traditional fibre panels could accommodate up to 96 fibres in 1U of rack space and this solution accommodates 108 40Gbit/sec ports, equating to 432 fibres.

Square meterage in a datacentre is becoming one of the limiting factors in expanding existing Greenfield capabilities. When a new technology such as 40Gbit/sec or 100Gbit/sec comes along which requires an increase in footprint from legacy systems, this puts a big constraint on the ability to deploy this new technology. From the early concepts of supporting prospective 40G/100G standards, it was quickly identified that datacentre owners wanted a way of keeping existing universal wiring to improve RoI and maintain flexibility. The biggest issue was to come up with a way of utilising existing base-12 fibre count trunks used in existing 1/10G systems when migrating to 40G/100G, which uses base-8 fibre counts.

The advanced solution for parallel optics was to design conversion modules and cable harnesses for the structured cabling systems that allowed networks to fully utilise existing cable housing, keep existing trunk cables in place with fully utilised fibre while offering much greater fibre density. The solution takes two 12 fibre MTP connections, combines them and then splits them back out to three 40Gbit/sec or 100Gbit/sec 8 fibre MTP connections.

This migration approach satisfies the ongoing need for operational excellence and cost efficiency as the datacentre evolves, providing rapid implementation and minimal disruption.

Over the past year Corning has seen increasing demand within its existing customer base (both expansion upgrades and new facilities) for the need to support higher speeds within a high-density footprint along with a requirement for rapid provisioning.

### **What are the major differentiators between your product/solution and those of your primary competitors?**

- I. With up to 108 x 40G fibre ports in a 1U housing, providing unequalled rack density and ease of access with reduced cabling footprint for migration to 40G and 100G using parallel optics, which addresses space, capacity and scalability challenges.
- II. Quick and easy migration with replacement conversion modules, which enables attached IT equipment with QSFP ports to utilise existing cable infrastructure hardware and trunk cables while maintaining 100% fibre utilisation and no increase in rack space, minimising disruption and cost.
- III. The first integrated port tap module for network monitoring of Ethernet 40GBASE-SR4 multimode fibre circuits. A Zero U Device integrated into the structured cabling avoids the cost of external optical splitters and additional links in alternative solutions that increase the likelihood of network downtime and optical loss.

- IV. Installation and configuration is also made simpler with innovative wiring in the module and reversible adaptors to fully manage optical polarity of the links avoiding the need for different module configurations or lengthier add, moves and changes. This reduces MAC costs by 25% versus tool-oriented solutions.

### Why nominee should win

- I. By increasing the port density equal to today's 10G solutions, there is no need to add housings when migrating to higher speeds - improving infrastructure ROI by 30 - 50%.
- II. The solution can be easily adapted and installed without the need for extensive manpower, disturbing existing connections, or disrupting daily datacentre operations.
- III. A plug-and-go high-speed migration strategy delivers faster time to service speeding up installation by 35%.
- IV. Continuous innovation and collaboration with electronic device and equipment manufacturers to minimise link-loss and maximise distance at higher speeds